

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Engineering Division
Honolulu, Hawaii 96813

March 14, 2014

Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

**APPLICATION FOR A DAM SAFETY CONSTRUCTION/ALTERATION PERMIT
PERMIT NO. 62 – AHUKINI RESERVOIR (KA-0044)
DAM REMOVAL, KILAUEA, KAUAI, HAWAII**

The Engineering Division (Division) hereby submits an application for your approval and authorization for the Chairperson and Department to stipulate conditions and issue a Dam Safety Construction/Alteration Permit for the subject application, “Dam removal of the AHUKINI RESERVOIR”, pursuant to Hawaii Revised Statutes Chapter 179D and current Administrative Rules.

APPLICANT:

Michael Tresler
Grove Farm
3-1850 Kaumualii Highway
Lihue, Hawaii 96766

LAND OWNER:

Same as applicant

SUMMARY OF REQUEST:

Application for a Dam Safety Construction/Alteration Permit for the dam removal of the Ahukini Reservoir, Lihue, Kauai, Hawaii. (See Exhibit 1)

LOCATION:

Lihue, Kauai, Hawaii, TMK: (4) 3-6-002:001 (See Exhibit 2)

BACKGROUND:

The Ahukini Reservoir was originally constructed in 1926 mainly to be used for irrigation purposes, and is an off-stream storage reservoir. The dam and reservoir is now owned by Grove Farm. The reservoir is not currently in use and has been breached. Old notes indicate that the reservoir may have been breached and filled in around 1999.

Although physically breached, the Ahukini Reservoir is still listed as a regulated dam on the Dam Safety Program regulated list of dams and a Dam Safety Construction/Alteration permit

must be obtained and approved for removal from regulatory oversight. This dam safety construction/alteration permit application project will improve the spillway breach channel and requests that the Ahukini Reservoir be removed from dam safety regulation upon completion of the work.

DESCRIPTION:

Ahukini Reservoir is an off-stream reservoir. There is an interceptor swale that diverts runoff away from the reservoir and therefore the contributing runoff would be its own watershed, which is limited to the reservoir basin. A hydrologic and hydraulic analysis was conducted and the maximum hydraulic height of the Ahukini dam during the Probable Maximum Flood (PMF) was calculated to be 7.30-ft high with a corresponding maximum storage of 34.823 ac-ft volume. The breach section is 16-ft wide and the height of water in the channel during the 100-yr, 24-hr storm is 3.22-ft, less than the 5-ft maximum required for a breach.

The project will be to grade the spillway to allow for a gentler slope and reduce the velocities of any water that may flow through the channel, which in turn will reduce the chance of erosion during periods of high flows.

The effective height and volume capacity of the dam will be reduced such that it will fall below the requirements that satisfy the definition of a dam, pursuant to Hawaii Revised Statutes Chapter 179D. (See Exhibit 3)

CHAPTER 343-HRS – ENVIRONMENTAL ASSESSMENT:

The project is entirely on privately owned lands and does not trigger the requirement for completion of an environmental assessment. (See Exhibit 4 for evaluation)

REMARKS:

The applicant (Grove Farm) and their engineering consultant, Lyon Associates, have completed a Hydrologic and Hydraulic report, plans and specifications and requests for the approval of a dam safety construction/alteration permit. The Division has reviewed the documents and concluded that it is sufficient for its intended purposes. Staff recommends approval of this permit application with the Dam Safety Permit General Conditions. (See Exhibit 5)

RECOMMENDATION:

That the Board:

1. Authorize the approval and issuance of the Dam Safety Construction/Alteration Permit for this project; and
2. Direct the Chairperson to issue a dam safety permit for the removal of the Ahukini Reservoir (DLNR Dam Safety Construction/Alteration Permit No. 62) subject to such other terms and conditions as may be prescribed by the Chairperson to best serve the interests of the State.

March 14, 2014

3. Authorize the Department to oversee performance of the permitted work and take appropriate action including but not limited to issuance of fines and/or revocation of the permit, if necessary.
4. Authorize the Department to remove this dam from the dam safety regulatory inventory and the requirements of Hawaii Revised Statutes Chapter 179D, upon satisfactory completion of the construction project.

Respectfully submitted,



CARTY S. CHANG
Chief Engineer

APPROVED FOR SUBMITTAL:



WILLIAM J. AILA, JR.
Chairperson

- Exhibit(s):
1. Owner Permit Application
 2. Location map
 3. Construction Drawing pages
 4. Chapter 343-HRS Review
 5. General permit conditions

TECHNICAL INFORMATION:

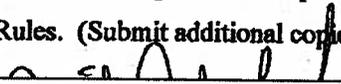
1. Drainage Area _____ sq. miles or 12.06 acres
2. Classification of Dam High Hazard
3. Type of Structure Earth
4. Elevation-Area-Capacity Data:

	Elevation	Surface Area (acres)	Total Storage Volume (acre-feet)
Natural Streambed	<u>N/A</u>	<u>TOTAL 10.6 ac</u>	<u>TOTAL 35.881 af</u>
Primary Spillway	<u>188'</u>		
Secondary Spillway	<u>N/A</u>		
Top of Dam	<u>198'</u>		
Design Water Level	<u>189.38'</u>		
Invert of Drain	<u>182'</u>		
5. Spillway Details (Type, Dimensions, Material)
Primary: Channel, 16' width (bottom), 2:1 side slope, Bare soil
Secondary: N/A
6. Purpose of Structure N/A
(water supply, irrigation, recreation, real estate development, etc.)
7. Attach rainfall and stream flow records, and flood-flow records and estimates (as accurately as may be readily obtained)

ADDITIONAL INFORMATION

1. Primary Owner Contact (if different from applicant) _____
Owner Company or Entity: _____
Mailing Address _____
Telephone: _____ Fax: _____ Email: _____
2. Registered Hawaii Professional Engineer who prepared the plan _____
Haku Milles
Mailing Address 45 N. King Street Suite #501 Honolulu, HI 96817
Registration No. 13482-C
Telephone: 808-536-6621 Fax: 808-523-1738 Email: haku.milles@LYON.us.com
3. Registered Professional Engineer to be responsible for inspection during construction _____
Haku Milles
4. Contractor (If known) Not known at this time.
Mailing Address _____
Telephone: _____ Fax: _____ Email: _____
5. List all other permits applications submitted to other governmental agencies:
N/A
6. Anticipated effect of proposed structure on natural environment: None

7. List all other parties that have ownership or other interest on the parcels where the dam and reservoir are located and identify their interest in the property. The Owners herein listed below concur with the work proposed within this application by the applicant and by his/her signing hereto, the owner of the land extends to the Board of Land and Natural Resources, and its designated representatives, a right-of-entry onto the project site to conduct any investigations or inspections required in compliance with the provisions of Chapter 13-190, Hawaii Administrative Rules. (Submit additional copies of this sheet should there be more owners)



(Signature of Owner)

AMUKIAI Reservoir / 100% Owner

(Address / Interest in Dam or Reservoir)

(Signature of Owner)

(Address / Interest in Dam or Reservoir)

(Signature of Owner)

(Address / Interest in Dam or Reservoir)

(Signature of Owner)

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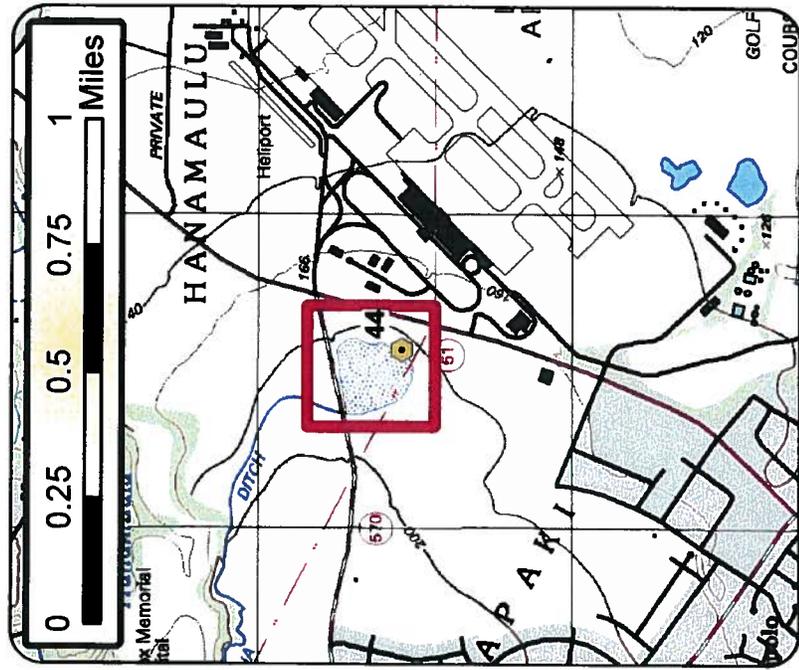
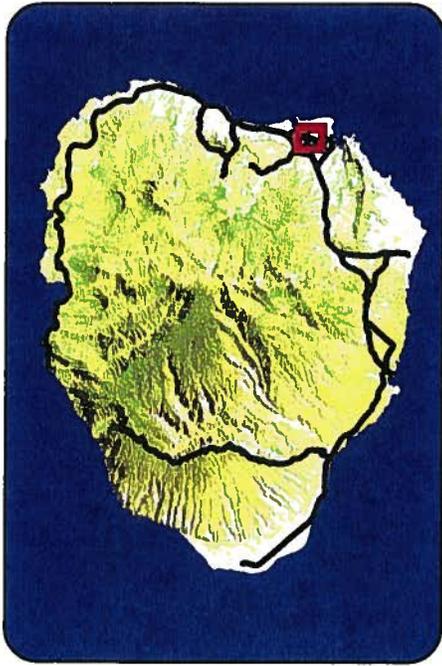
(Address / Interest in Dam or Reservoir)

I, Michael Tresler, the applicant, hereby certify that the information herein is true and factual to the best of my knowledge. Signing below indicates that the applicant understands that, if the permit requested is granted by the Board of Land and Natural Resources, the proposed work is to be initiated and completed within two (2) years of the approval date, unless specifically permitted in the approved permit terms and conditions.



(Signature of Applicant & Title) Jr. V.P.

Date: 10-11-13



Ahukini Reservoir (KA-0044)

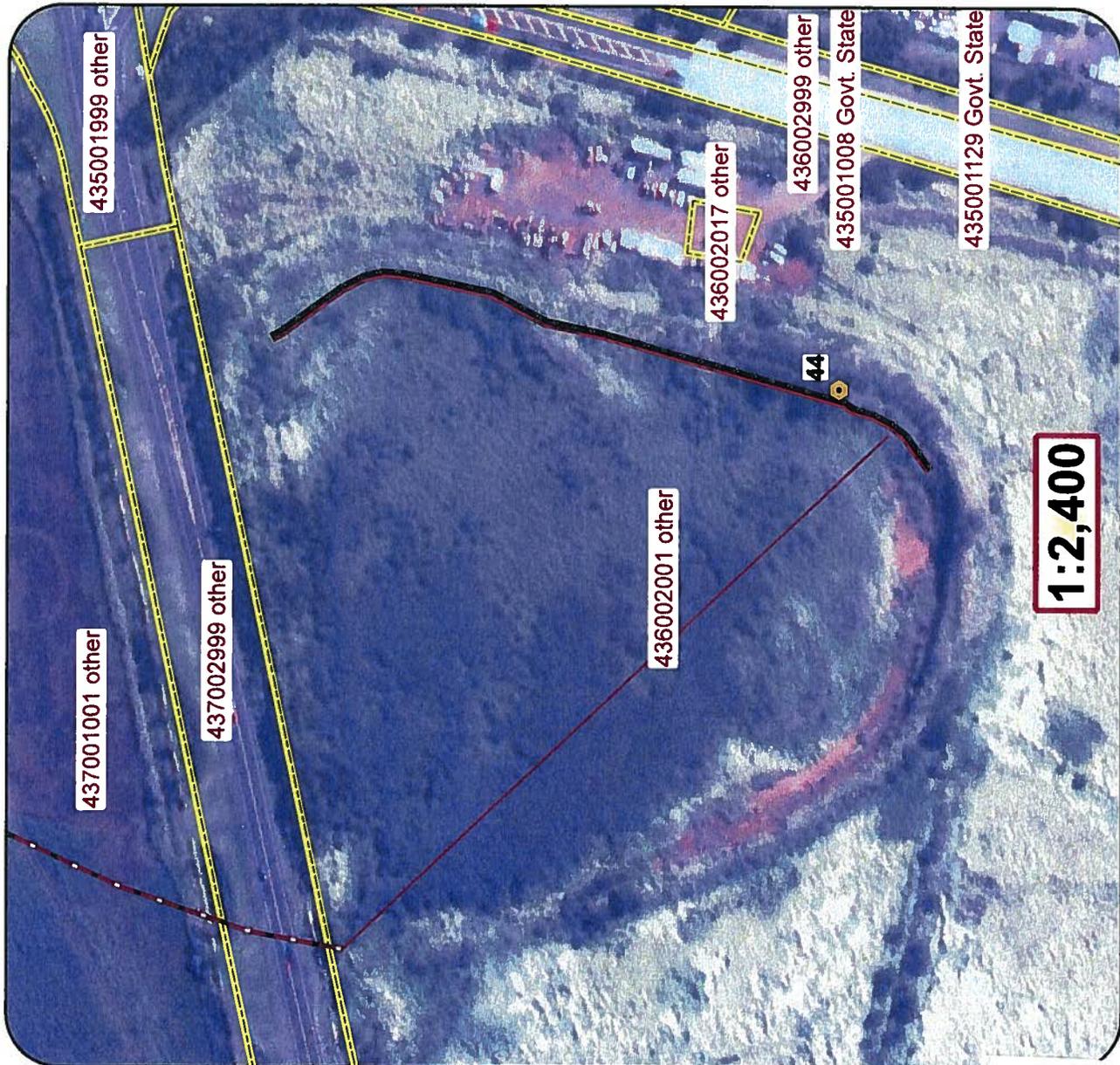
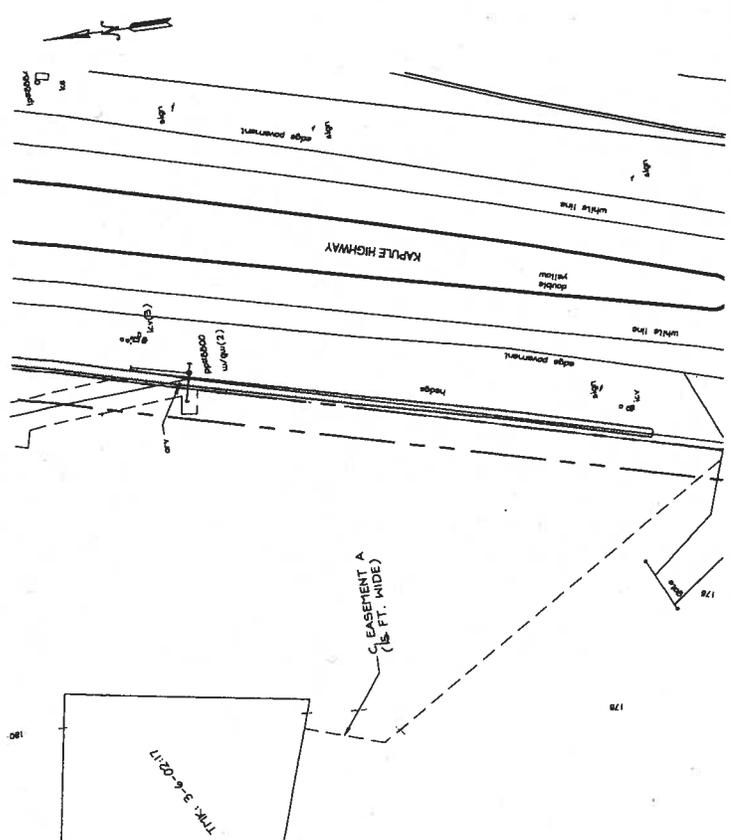


Exhibit 2



EARTHWORK QUANTITIES (FOR POSTUR PURPOSES ONLY)

FILL (TOTAL)	= 44.88 CY
CUT (TOTAL)	= 0.00 CY
FILL (NET)	= 44.88 CY
AREA TO BE GRADED	= 0.00 ACRES
AREA TO BE CONTAIRED	= 0.00 ACRES

LEGEND:

EXISTING CONTOUR MAJOR	620
EXISTING CONTOUR MAJOR	610
PROPOSED CONTOUR MAJOR	600
PROPOSED CONTOUR MAJOR	610
LIMITS OF GRADING	

GROVE FARM

AHUKINI RESERVOIR
 TMK(4)3-8-002:001
 NHD H000044
 Kauai County, Hawaii

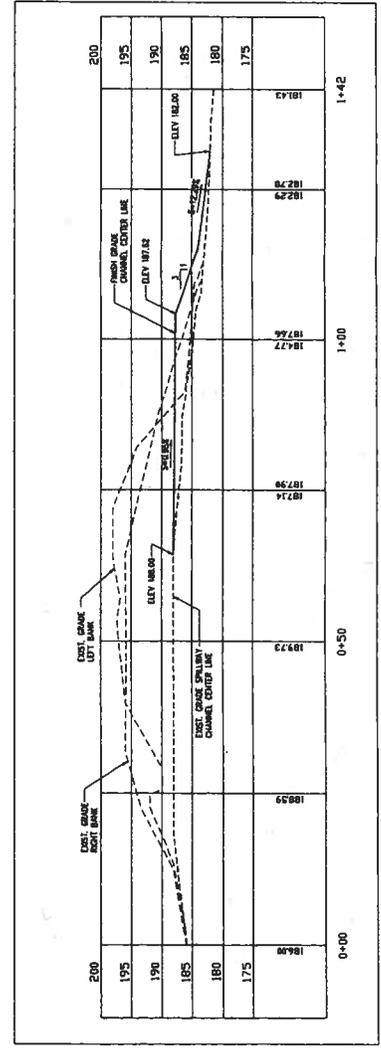
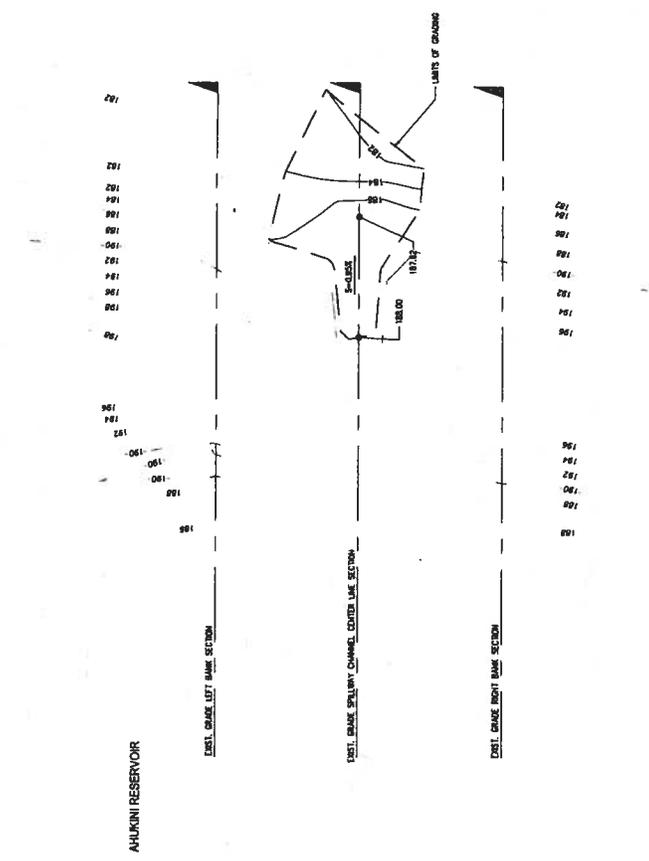
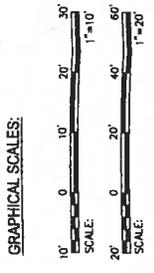
GRADING PLAN

LYON

REVIEW SET (NOT FOR CONSTRUCTION)
 10-11-2013

DATE: 10-11-2013

BY: [Signature]



CHAPTER 343 ANALYSIS

Project Name: Ahukini Reservoir (KA-0044) – Dam Removal

Dam Safety Construction/Alteration Permit No. 62

Reviewer: Denise Manuel

Date of Review: February 12, 2014

TRIGGERS (HRS §343-5(a))

Is there an "action" that triggers the need for an EA?

Action

An "action" is a program or project:

 Initiated by an agency

 X Initiated by an "applicant"

Any person who, pursuant to statute, ordinance, or rule, officially requests "approval" for a proposed action (discretionary consent required from an agency prior to actual implementation of an action, distinguished from a ministerial consent)

 HRS 179D Statute

 Ordinance

 Rule

Triggers

Yes No

 X Use of state or county lands or funds

 X Use of conservation district lands

 X Use within shoreline setback area

 X Use of historic site designated on the National or Hawaii registers

 X Use of land in the Waikiki Special District

 X Amendment to county general plan which would result in designations other than agriculture, conservation, or preservation unless initiated by a county

 X Reclassification of conservation lands by the Land Use Commission

 X Construction or modification of helicopter facilities that may affect conservation district lands, a shoreline setback area, or a historic site

 X Wastewater facilities, waste-to-energy facility, landfill, oil refinery, or power-generating facility

Triggers summary:

Is there a trigger? Yes No X

If Yes, Go to Exemptions

If No, Environmental Assessment is NOT required. Go to Summary.

EXEMPTIONS

Two sources of exemptions: exemption lists or exemptions contained in HAR §11-200-8(a)

1. Exemption Lists

 Division exemption lists

 Department-wide exemption list

Explain (which exemption list, which exemption, how it applies):

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2. HAR §11-200-8(a) exemptions
- _____ Operations, repairs, or maintenance of existing structures, facilities, equipment, or topographical features, involving *negligible or no expansion or change of use* beyond that previously existing

 - _____ Replacement or reconstruction of existing structures and facilities where the new structure will be located generally on the same site and will have *substantially the same purpose, capacity, density, height, and dimensions* as the structure replaced

 - _____ Construction and location of a single, *new, small facilities* or structures and the alteration and modification of the same and installation of new, small, equipment and facilities and the alteration and modification of same, including, but not limited to:
 - (a) *Single family residences less than 3,500 square feet* not in conjunction with the building of two or more such units;
 - (b) *Multi-unit structures designed for not more than four dwelling units* if not in conjunction with the building of two or more such structures;
 - (c) *Stores, offices, and restaurants designed for total occupant load of twenty persons or less* per structure, if not in conjunction with the building of two or more such structures; and
 - (d) *Water, sewage, electrical, gas, telephone, and other essential public utility services extensions to serve such structures* or facilities; accessory or appurtenant structures including garages, carports, patios, swimming pools, and fences; and acquisition of utility easements

 - _____ *Minor alterations* in the conditions of land, water, or vegetation

 - _____ Basic data collection, research, experimental management, and resource evaluation activities that *do not result in a serious or major disturbance* to an environmental resource

 - _____ Construction or placement of *minor structures accessory* to existing facilities

 - _____ *Interior alterations* involving things such as partitions, plumbing, and electrical conveyances

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- Demolition of structures, *except* those structures located on any *historic site* as designated on the National or Hawaii registers
- Zoning variances *except shoreline* set-back variances
- Continuing administrative activities including, but not limited to purchase of supplies and personnel related actions; and
- Acquisition of land and existing structures, including single or multi-unit dwelling units, for the provision of *affordable housing*, involving *no material change of use* beyond that previously existing, and for which the *legislature has appropriated* or otherwise authorized *funding*

Explain (how the exemption indicated above applies):

Exemptions summary:

Does the Project qualify for an exemption? Yes No

If Yes, Exemption noted above, No Environmental Assessment required

If No, Project does not qualify for exemption and requires an Environmental Assessment

CUMULATIVE IMPACT

Exemptions are inapplicable when the cumulative impact of planned successive actions in the same place, over time, is significant, or when an action that is normally insignificant in its impact on the environment may be significant in a particularly sensitive environment.

SUMMARY

Is Environmental Assessment required?

Yes
No

DAM SAFETY PERMIT GENERAL CONDITIONS

APPROVAL OF PLANS AND SPECIFICATIONS FOR DAM AND RESERVOIR CONSTRUCTION, ENLARGEMENT, REPAIR, ALTERATION OR REMOVAL

The following General Conditions shall be adhered to for all Dam Safety permits unless otherwise authorized in writing.

1. Actual construction, enlargement, repair, alteration or removal shall be completed within 5 years of issuance of the permit application approval unless an extension authorized in writing by the Board is issued.
2. Prior to the start of work the owner or applicant shall provide a construction engineer to ensure compliance with the approved plans and specifications and who shall have ultimate responsibility for the supervision of all inspection tasks. The construction engineer may assign some inspection tasks to a duly authorized agent under the construction engineer's supervision. The engineer shall be licensed in the State of Hawaii.
3. The construction engineer shall maintain a record of construction that at a minimum, shall include, daily activity, and progress reports, all test results pertaining to construction; photographs sufficient to provide a record of foundation conditions and various stages of the construction through completion, all geologic information obtained; and construction problems and remedies.
4. A construction quality assurance plan shall be prepared and submitted to the Department for approval prior to the start of construction, which details the minimum requirements of the construction engineer's observation of construction.
5. A construction schedule, which includes the notice to proceed date and estimated project duration and a construction emergency action plan shall be submitted prior to the preconstruction meeting.
6. A preconstruction meeting shall be held subsequent to submitting the quality assurance plan, construction schedule and construction emergency action plan, but not later than 14 days prior to the start of construction. All parties actively involved in the construction should be requested to attend, such as the dam owner, the design engineer, the construction engineer, the contractor and the Department.
7. The Department shall be notified 5 calendar days prior to the commencement of construction.
8. Any changes from the approved plans and specifications shall be approved by the design engineer and a change order, including details and supporting calculations, must be provided to the Department. Major changes must be submitted in writing with supporting documentation and approved in writing by the Department. No work shall be initiated until the approval by the Department or Board is received. Minor changes may be transmitted verbally and approved by the Department verbally provided that documentation of the change is provided to the Department within 10 days of the approval.

9. For new dam construction and for dams and reservoirs that have lowered the water level or have been drained to facilitate construction, the construction engineer shall file and obtain approval of a filling plan with the Department. The applicant/owner shall not proceed with the filling of the reservoir until it receives permission from the Department. The construction engineer shall provide documentation of monitoring during the filling operation.
10. Prior to the filling of the reservoir, the construction engineer shall submit one copy each of the approved Operations Manual and the approved Emergency Action Plan for the facility upon completion of the project as applicable.
11. The construction engineer shall give the Department at least ten days advanced notice of initial materials placement of the dam's foundation, in the cutoff trench, outlet backfill, outlet foundation, and any appurtenance requested by the Department in the approval of the plan for construction observation, to allow for observation by the Department.
12. Notice of substantial completion shall be issued by the construction engineer to the Department stating that the permitted improvements are functionally complete such that filling of the reservoir can be initiated with an approved filling plan.
13. The construction engineer shall give the Department fifteen (15) calendar days advance written notice prior to the project's final construction inspection. The construction engineer shall coordinate with the Department to conduct this inspection in the presence of the Department's dam safety personnel.
14. The construction engineer shall provide notice at least ten (10) days prior to initiating filling the reservoir, unless agreed at the final inspection.
15. If conditions are revealed which will not permit the construction, enlargement, repair, alteration, or removal of a safe dam or reservoir, the application for approval for construction, enlargement, repair, alteration, or removal shall be revoked.
16. A topographic survey of completed work including all monuments, inverts, crest alignment, spillways, and significant appurtenant features, when required by the Department shall be completed.
17. The applicant/owner shall utilize appropriate erosion control best management practice measures during construction to minimize turbidity (such as scheduling of work during period of low stream flow) and prevent debris and construction materials, including concrete, petroleum products, and other pollutants from enter the waters of the State. Construction related water and debris should be properly disposed of in a legal and environmentally safe manner and in accordance with the Department of Health and other Federal regulations.
18. The applicant/owner shall submit a copy of the dam safety application and the plans and specifications of the proposed improvements to the County Engineer of the County for which the dam resides for compliance with County codes.
19. Within fifteen (15) calendar days of completing the project, the applicant/owner or its representative shall provide the Department with a confirmation letter of compliance, signed and stamped by the construction engineer, indicating that the construction

was completed in accordance to approved plans and specifications including any field changes. The construction engineer shall submit the remaining construction completion documents which may include, but not be limited to, as-constructed drawing, final construction report, topographic survey, record of the location of permanent monuments, log of recorded water levels and other readings from the refilling operation, long-term instrumentation monitoring plan, and affidavit showing the actual cost of construction including engineering costs, within 60 calendar days of the submittal of the final construction inspection.

20. Construction completion documents and the construction engineer's certification shall be provided to the Department within 60 days of the final construction inspection. The Department will review the submitted items and furnish acceptance or denial within 60 days of receipt of satisfactorily completed construction completion documents and close out the dam safety permit.
21. This permit does not relieve the applicant/owner of their obligations to comply with all applicable Federal, State, and County regulations.
22. Compliance with Hawaii Revised Statutes 179D, and Hawaii Administrative Rules 13-190.1.